

PCT

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FOR PCT-1390 (Rev. 10-90)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371			01-117
INTERNATIONAL APPLICATION NO. PCT/HU99/00052			U.S. APPLICATION NO. (if known, see 37 C.F.R.1.5) 09/744035
INTERNATIONAL FILING DATE July 16, 1999		PRIORITY DATE CLAIMED July 22, 1998	
TITLE OF INVENTION UNIVERSAL CARTRIDGE FOR A MIXER FAUCET			
APPLICANT(S) FOR DO/EO/US GYOZO BAKI			
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:			
<ol style="list-style-type: none"><li>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</li><li>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</li><li>3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</li><li>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</li><li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))<ol style="list-style-type: none"><li>a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li><li>b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.</li><li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li></ol></li><li>6. <input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</li><li>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))<ol style="list-style-type: none"><li>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</li><li>b. <input type="checkbox"/> have been transmitted by the International Bureau.</li><li>c. <input type="checkbox"/> have not been made, however, the time limit for making such amendments has NOT expired.</li><li>d. <input type="checkbox"/> have not been made and will not be made.</li></ol></li><li>8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li><li>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</li><li>10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</li></ol>			
Items 11. to 16. below concern document(s) or information included:			
<ol style="list-style-type: none"><li>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li><li>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li><li>13. <input type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</li><li>14. <input type="checkbox"/> A substitute specification.</li><li>15. <input type="checkbox"/> A change of power of attorney and/or address letter.</li><li>16. <input type="checkbox"/> Other items or information:</li></ol>			

page 1 of 2

(January 1995)

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January 17, 2001

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17 JAN 2001

U.S. APPLICATION NO. (37 CFR 1.53) <b>09/744035</b>		INTERNATIONAL APPLICATION NO. <b>PCT/H099/00052</b>		ATTORNEY'S DOCKET NUMBER <b>01-117</b>	
17. <input checked="" type="checkbox"/> The following fees are submitted:				CALCULATIONS . PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):					
Search Report has been prepared by the EPO or JPO.....				\$860.00	
International preliminary examination fee paid to USPTO (37 CFR 1.482).....				\$660.00	
No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2))..				\$730.00	
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....				\$980.00	
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4).....				\$92.00	
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$ 860.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$ 130.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	2 -20 =		X \$22.00	\$	
Independent claims	1 -3 =		X \$76.00	\$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$240.00	\$	
TOTAL OF ABOVE CALCULATIONS =				\$ 990.00	
Applicant claims small entity status				\$ -495.00	
SUBTOTAL =				\$ 495.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$ 130.00	
TOTAL NATIONAL FEE =				\$ 625.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +				\$ --	
TOTAL FEES ENCLOSED =				\$ 625.00	
				Amount to be:	
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a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>625.00</u> to cover the above fees is enclosed.					
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c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>02-0184</u> . A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO:				SIGNATURE	
Bachman & LaPointe, P.C.				Robert H. Bachman	
900 Chapel Street, Suite 1201				NAME	
New Haven, CT 06510-2802				19,374	
				REGISTRATION NUMBER	

SCANNED # 22

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : GYOZO BAKI                      Docket No.: 01-117  
Serial No.: 09/744,035                      Examiner :  
Filed : January 17, 2001                      Art Unit :  
For : UNIVERSAL CARTRIDGE FOR A  
MIXER FAUCET

900 Chapel Street  
Suite 1201  
New Haven, CT 06510-2802

PRELIMINARY AMENDMENT

Hon. Commissioner of Patents and Trademarks  
United States Patent and Trademark office  
Washington, D.C. 20231

Dear Sir:

In the above-identified application for United States  
patent, please amend as follows:

IN THE SPECIFICATION

Attached is a substitute specification with added material  
being underlined and material being removed shown in brackets.  
Also enclosed is a clean copy of the specification.

IN THE CLAIMS

Cancel claims 1 and 2, and insert new claims 3 and 4, a  
clean copy of which is attached hereto, in their place.

IN THE ABSTRACT

Please amend the Abstract pursuant to the attached with added material being underlined and material being removed shown in brackets.


R E M A R K S

The instant Preliminary Amendment is submitted so as to insert the substitute specification, new claims and amended abstract which correspond to the amendments made in the corresponding international application.

An early action on the merits is requested.

Respectfully submitted,

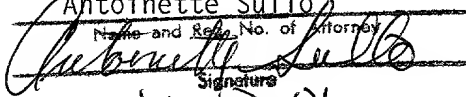
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Date: April 17, 2001

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April 17, 2001  
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Antoinette Sullo  
Name and Reg. No. of Attorney  
  
Signature  
4-17-01  
Date of Signature

AMENDED ABSTRACT

ABSTRACT

Valve battery cartridge - used primarily for mixing cold water and warm water - which has two discs arranged one above the other to form a plane sealing together, being the lower disc a stationary inlet disc (6) and the upper disc a control disc (5) suitable to be displaced and rotated on the inlet disc (6); where said control disc (5) is in mechanical connection with a driving arm (1) pivoted in a lever holder (2) - through a ceramic moving element (4) as the case may be - and the lever holder (2) is arranged in the cartridge casing that allows it to be rotated, [whereas the part of the cartridge casing (3) near the inlet disc (6) - preferably, its base (9) - is provided with a connection place (14) on the side opposite to the inlet disc (6) to accommodate several insertion pieces (10) - preferably of various function - where its hole suitable to accommodate the insertion piece (10) is arranged essentially in the direction opposite to the base (9) of the cartridge.] while on the base (9) of the cartridge a connection place (14) is formed or arranged for the reception of at least one insertion piece (10), further the opening for the admission of the insertion piece (10) of the connection place (14) is formed principally in a direction which is parallel with the longitudinal axis of the

cartridge, whereas the connection place (14) is an outwardly  
directed sleeve, arranged or formed on the base (9), wherein the  
cold and warm water inlet formed in the base are ending.

[(Figure 1.)]

NEW CLAIMS 3 AND 4

3. Valve battery cartridge - used primarily for mixing cold water and warm water - which has two discs arranged one above the other to form a plane sealing together, being the lower disc a stationary inlet disc and the upper disc a control disc suitable to be displaced and rotated on the inlet disc; where said control disc is in mechanical connection with a driving arm pivoted in a lever holder - through a ceramic moving element as the case may be - and the lever holder is arranged in the cartridge casing that allows it to be rotated, while on the base of the cartridge a connection place is formed or arranged for the reception of at least one insertion piece, further the opening for the admission of the insertion piece of the connection place is formed principally in a direction which is parallel with the longitudinal axis of the cartridge, characterized in that the connection place is an outwardly directed sleeve, arranged or formed on the base, wherein the cold and warm water inlet formed in the base are ending.

4. Cartridge according to claim 3, characterized in that the insertion piece, which is partly arranged in the connection place, is partly arranged between the valve battery casing and the connection place.

20 APR 2001

TITLE: UNIVERSAL CARTRIDGE FOR A MIXER FAUCET

09/744035

*BACKGROUND OF THE INVENTION*

In the technical practice, valve battery insertion assemblies called cartridges are already known which implement the tasks of closing and opening the cold- and warm-water inlet pipelines, the mixing of cold- and warm water as well as the routing of the mixed water to the outlet of the valve battery in a single structural assembly, the so-called cartridge.

In their basic design, these cartridges include a cartridge casing bordered with a base, an inlet disc fixed inside the cartridge casing as well as a control disc suitable to be displaced and rotated on the inlet disc on the side opposite to the base.

The control disc is driven through a ceramic moving element by means of a driving arm pivoted in the lever holder.

The lever holder supporting the driving arm is arranged in the cartridge casing so as to allow it to be rotated.

In the inlet disc and the control disc, appropriate bores and holes are shaped for the purpose of controlling the inlet of cold- and warm water as well as the outlet of mixed water.

The cartridges of simpler design described above are widely used; in fact, they are capable of fulfilling the basic



functions expected of a cartridge used in valve batteries, even without any addition.

There are, however, an increasing demand for cartridges to fulfil other functions as well.

The functions required most frequently are the pressure equalization, the use of non-return valves and the reversibility.

The pressure equalization of both the cold water and warm water is a very important task; otherwise, any sudden change in the pressure of either inlet branch would result in scalding and cold water shock, respectively, to the user.

Pressure reduction of cold water inlet occurs frequently if a cold water consumer device e.g. toilet rinsing tap is mounted near the mixing valve; in fact, its operation results in sudden decrease in the cold water support pressure which, in turn, causes the sudden rise of mixed water temperature from the cartridge without pressure equalization.

The non-return valves are necessary in installations where the possibility exists that water from the branch of higher pressure flows to that of lower pressure when the cartridge is open.

The possibility of reversion is necessary to allow the cartridge to be connected to an unusual cold water and warm water supply arranged e.g. on two sides of a bathroom wall.

According to the present state of technique, various solutions of the above tasks are known.

The USA patent description No. 5.725.010 describes a pressure equalizer and mixing valve battery in which the pressure equalizer assembly is arranged in the valve battery body between the traditional cartridge and the water inlet pipes.

The patent application No. EP 0559998 also describes a cartridge with pressure equalization. Its essence is, that the base of the traditional cartridge is provided with a protrusion which includes a seat arranged perpendicular to the symmetry axis of the cartridge, and a pressure equalizer is arranged perpendicular to the symmetry axis of the cartridge in the said seat.

Usually, the non-return valves are mounted directly on the inlet pipelines themselves; thus, according to the traditional practice, they are not integrated into the cartridge.

For the solution of reversion, the USA patent No. 4.676.270 is known, where the reversion is performed by a cylinder which is mechanically independent of the cartridge.

The patent application No. EP 0771980 also describes a solution in which the structural elements of various function are fastened by means of connecting elements to the relevant cartridge casing.

The application No. EP 0 684 416 discloses a cartridge, where in the base of the cartridge there are formed two separated and partly widened conducting openings, separately for the cold and warm water, further in the widened part of each opening there is arranged a back-flow preventer valve, both of them can be manufactured integrally.

This solution is excellent, when the two separate inserts do not have to communicate with each other, however cannot be used if the two separate inserts have to communicate with each other, or have to be connected to each other.

An unfavorable feature of the above solutions is that they are task-specific; this means that the base of cartridge shall be designed according to the task.

In order to eliminate the above unfavorable features, the present invention is aimed at establishing a solution which, without any special technical knowledge, can be used universally for providing the cartridges known in themselves with elements of various additional functions.

This invention is aimed at implementing a cartridge which ensures quickly and safely that, by using cartridges known in themselves and elements performing various additional functions, an arrangement integrated simply and quickly can be established.

According to the present invention, the above task is solved by means of an universal mixing valve battery cartridge -

used primarily for mixing cold water and warm water - which has two discs arranged one above the other to form a plane sealing together, being the lower disc a stationary inlet disc and the upper disc a control disc suitable to be displaced and rotated on the inlet disc; where said control disc is in mechanical connection with a driving arm pivoted in a lever holder - through a ceramic moving element as the case may be - and the lever holder is arranged in the cartridge casing that allows it to be rotated; while on the base of the cartridge a connection place is formed or arranged for the reception of at least one insertion piece, further the opening for the admission of the insertion piece of the connection place is formed principally in a direction which is parallel with the longitudinal axis of the cartridge, whereas the connection place is an outwardly directed sleeve, arranged or formed on the base, wherein the cold and warm water inlet formed in the base are ending.

In a preferred embodiment of the mixing valve battery cartridge according to the invention, the insertion piece, which is partly arranged in the connection place, is partly arranged between the valve battery casing and the connection place.

## BRIEF DESCRIPTION OF THE DRAWINGS

The valve battery cartridge according to the invention is described in detail, based on the exemplary embodiment indicated in the Figures annexed.

Fig. 1 shows the basic type of the cartridge according to the invention in side sectional view with an insertion piece.

Fig. 2 shows the basic type of the cartridge according to the invention in side sectional view without an insertion piece.

Fig. 3 shows the side view of the basic type of cartridge according to the invention.

Fig. 4 shows the bottom view of the basic type of cartridge according to the invention.

Fig. 5 shows the design of the standard insertion piece for the cartridge according to the invention.

Fig. 6 shows the design of the pressure equalizer insertion for the cartridge according to the invention.

Fig. 7 shows the design of the reverting insertion piece for the cartridge according to the invention.

## DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

As shown in Fig. 1 that, in the valve battery body 12 of a valve battery, a casing 3 is arranged, which accommodates a lever holder 2 so as to allow its rotation.

The lever holder 2 holds the driving arm 1 pivoted on the rotational axis 7, being said driving arm 1 in connection through the ceramic moving element 4 with the control disc 5.

The control disc 5 is arranged on the inlet disc 6 in which holes are shaped for the inlet of cold water and warm water as well as outlet of mixed water.

The inlet disc 6 is arranged on the base 9 connected to the casing 3, where the base 9 includes the connection place 14 to accommodate the insertion piece 10.

In the holes of the base 9 and the inlet disc 6, the rubber sealing 8 is arranged while between the valve battery body 12 and the casing 3, and the insertion piece 10 and the base 9 as well as the other end of the insertion piece 10 and the valve battery body 12, the seals 11 are arranged. In the valve battery body 12, the connection ducts 13 are shaped.

Fig. 2 shows the valve battery cartridge of Fig. 1 without the insertion piece 10.

Fig. 3 shows the side view of the cartridge of Fig. 1.

Fig. 4 shows the bottom view of the base 9.

The insertion piece 10 shown in Fig. 1 is suitable to be used for straight passage. The insertion piece 10 shown in Fig. 6 is designed as a pressure equalizer insertion piece. The insertion piece 10 shown in Fig. 7 is designed as a reverting insertion piece.

The function of the cartridge according to the invention is described below in detail.

As shown in Fig. 1, by actuating the driving arm 1, the relative position of the control disc 5 and the inlet disc 6 can be changed through the ceramic moving element 4.

By shutting off and bypassing the holes in the inlet disc 6 by means of the control disc 5, the temperature and flow of water outlet via the opening shaped in the base 9 to the valve battery body 12 can be changed in a manner known in itself.

The insertion piece 10 arranged in the connection place 14 parallel to the axis of the cartridge ensures the connection between the connection ducts 13 shaped in the valve battery body 12 and the inlet holes of base 9, while the seals 11 arranged between the valve battery body 12 and the insertion piece 10 ensure the leakage-free isolation between these connecting ducts and the inner space of valve battery body 12.

Thus, in the casing 3 of cartridge known in itself, the cold water and warm water flows from the connecting ducts 13 of the valve battery body 12 through the current insertion piece 10 to the holes shaped in the base 9 of the cartridge and, then, to the bores and holes of the inlet disc 6.

By changing the insertion piece 10, the cartridge provided with the insertion piece 10 is capable of fulfilling various functions; thus, the insertion piece 10 shown in Fig. 5

implements a simple inlet, the insertion piece 10 shown in Fig. 6 implements pressure equalization while the insertion piece 10 shown in Fig. 7 implements the inversion of water inlet.

The insertion pieces 10 are always inserted parallel to the longitudinal axis of cartridge into the connection place 14; thus, the seals 11 are under pressure when the cartridge is mounted in the valve battery body 12 and ensure sufficient sealing.

The advantage of the cartridge according to the invention is that, by changing the insertion piece 10 that requires no special skill, the function of the cartridge can be arbitrarily specified and changed by using the insertion pieces 10 available.





## Universal cartridge for a mixer faucet

**Subject of the invention:** Universal cartridge for a mixer faucet

In the technical practice, valve battery insertion assemblies called cartridges are already known which implement the tasks of closing and opening the cold- and warm-water inlet pipelines, the mixing of cold- and warm water as well as the routing of the mixed water to the outlet of the valve battery in a single structural assembly, the so-called cartridge.

In their basic design, these cartridges include a cartridge casing bordered with a base, an inlet disc fixed inside the cartridge casing as well as a control disc suitable to be displaced and rotated on the inlet disc on the side opposite to the base.

The control disc is driven through a ceramic moving element by means of a driving arm pivoted in the lever holder.

The lever holder supporting the driving arm is arranged in the cartridge casing so as to allow it to be rotated.

In the inlet disc and the control disc, appropriate bores and holes are shaped for the purpose of controlling the inlet of cold- and warm water as well as the outlet of mixed water.

The cartridges of simpler design described above are widely used; in fact, they are capable of fulfilling the basic functions expected of a cartridge used in valve batteries, even without any addition.

There are, however, an increasing demand for cartridges to fulfil other functions as well.

The functions required most frequently are the pressure equalization, the use of non-return valves and the reversibility.

The pressure equalization of both the cold water and warm water is a very important task; otherwise, any sudden change in the pressure of either inlet branch would result in scalding and cold water shock, respectively, to the user.

Pressure reduction of cold water inlet occurs frequently if a cold water consumer device e.g. toilet rinsing tap is mounted near the mixing valve; in fact, its operation results in sudden decrease in the cold water supply pressure which, in turn, causes the sudden rise of mixed water temperature from the cartridge without pressure equalization.

The non-return valves are necessary in installations where the possibility exists that water from the branch of higher pressure flows to that of lower pressure when the cartridge is open.

The possibility of reversion is necessary to allow the cartridge to be connected to an unusual cold water and warm water supply arranged e.g. on two sides of a bathroom wall.

According to the present state of technique, various solutions of the above tasks are known.

The USA patent description No. 5.725.010 describes a pressure equalizer and mixing valve battery in which the pressure equalizer assembly is arranged in the valva battery body between the traditional cartridge and the water inlet pipes.

The patent application No. EP 0559998 also describes a cartridge with pressure equalization. Its essence is, that the base of the traditional cartridge is provided with a protrusion which includes a seat arranged perpendicular to the symmetry axis of the cartridge, and a pressure equalizer is arranged perpendicular to the symmetry axis of the cartridge in the said seat.

Usually, the non-return valves are mounted directly on the inlet pipelines themselves; thus, according to the traditional practice, they are not integrated into the cartridge.

For the solution of reversion, the USA patent No. 4.676.270 is known, where the reversion is performed by a cylinder which is mechanically independent of the cartridge.

The patent application No. EP 0771980 also describes a solution in which the structural elements of various function are fastened by means of connecting elements to the relevant cartridge casing.

An unfavourable feature of the above solutions is that they are task-specific; this means that the base of cartridge shall be designed according to the task

In order to eliminate the above unfavourable features, the present invention is aimed at establishing a solution which, without any special technical knowledge, can be used universally for providing the cartridges known in themselves with elements of various additional functions.

This invention is aimed at implementing a cartridge which ensures quickly and safely that, by using cartridges known in themselves and elements performing various additional functions, an arrangement integrated simply and quickly can be established.

According to the present invention, the above task is solved by means of an universal mixing valve battery cartridge - used primarily for mixing cold water and warm water - which has two discs arranged one above the other to form a plane sealing together, being the lower disc a stationary inlet disc and the upper disc a control disc suitable to be displaced and rotated on the inlet disc; where said control disc is in mechanical connection with a driving arm pivoted in a lever holder - through a ceramic moving element as the case may be - and the lever holder is arranged in the cartridge casing that allows it to be rotated; while a part of the cartridge casing - preferably its base - is provided with a connection place on the side opposite to the inlet disc to accommodate several insertion pieces - preferably of various function - where its hole suitable to accommodate the insertion pieces is arranged essentially in the direction opposite to the base of cartridge.

In a preferred embodiment of the mixing valve battery cartridge according to the invention, the insertion piece is arranged - at least in part - between the valve battery casing and the connection place.

The valve battery cartridge according to the invention is described in detail, based on the exemplary embodiment indicated in the Figures annexed.

- Fig. 1 shows the basic type of the cartridge according to the invention in side sectional view with an insertion piece.
- Fig. 2 shows the basic type of the cartridge according to the invention in side sectional view without an insertion piece.
- Fig. 3 shows the side view of the basic type of cartridge according to the invention.
- Fig. 4 shows the bottom view of the basic type of cartridge according to the invention.
- Fig. 5 shows the design of the standard insertion piece for the cartridge according to the invention.
- Fig. 6 shows the design of the pressure equalizer insertion for the cartridge according to the invention.
- Fig. 7 shows the design of the reverting insertion piece for the cartridge according to the invention.

As shown in Fig. 1 that, in the 12 valve battery body of a valve battery, a 3 casing is arranged, which accommodates a 2 lever holder so as to allow its rotation.

The 2 lever holder holds the 1 driving arm pivoted on the 7 rotational axis, being said 1 driving arm in connection through the 4 ceramic moving element with the 5 control disc.

The 5 control disc is arranged on the 6 inlet disc in which holes are shaped for the inlet of cold water and warm water as well as outlet of mixed water.

The 6 inlet disc is arranged on the 9 base connected to the 3 casing, where the 9 base includes the 14 connection place to accommodate the 10 insertion piece.

In the holes of the 9 base and the 6 inlet disc, the 8 rubber sealing is arranged while between the 12 valve battery body and the 3 casing, and the 10 insertion piece and the

9 base as well as the other end of the 10 insertion piece and the 12 valve battery body, the 11 seals are arranged. In the 12 valve battery body, the 13 connection ducts are shaped.

Fig. 2 shows the valve battery cartridge of Fig. 1 without the 10 insertion piece.

Fig. 3 shows the side view of the cartridge of Fig. 1

Fig. 4 shows the bottom view of the 9 base.

The 10 insertion piece shown in Fig. 1 is suitable to be used for straight passage.

The 10 insertion piece shown in Fig. 6 is designed as a pressure equalizer insertion piece.

The 10 insertion piece shown in Fig. 7 is designed as a reverting insertion piece.

The function of the cartridge according to the invention is described below in detail.

As shown in Fig. 1, by actuating the 1 driving arm, the relative position of the 5 control disc and the 6 inlet disc can be changed through the 4 ceramic moving element.

By shutting off and bypassing the holes in the 6 inlet disc by means of the 5 control disc, the temperature and flow of water outlet via the opening shaped in the 9 base to the 12 valve battery body can be changed in a manner known in itself.

The 10 insertion piece arranged in the 14 connection place parallel to the axis of the cartridge ensures the connection between the 13 connection ducts shaped in the 12 valve battery body and the inlet holes of 9 base, while the 11 seals arranged between the 12 valve battery body and the 10 insertion piece ensure the leakage-free isolation between these connecting ducts and the inner space of 12 valve battery body.

Thus, in the 3 casing of cartridge known in itself, the cold water and warm water flows from the 13 connecting ducts of the 12 valve battery body through the current 10

insertion piece to the holes shaped in the 9 base of the cartridge and, then, to the bores and holes of the 6 inlet disc

By changing the 10 insertion piece, the cartridge provided with the 10 insertion piece is capable of fulfilling various functions; thus, the 10 insertion piece shown in Fig. 5 implements a simple inlet, the 10 insertion piece shown in Fig. 6 implements pressure equalization while the 10 insertion piece shown in Fig. implements the inversion of water inlet.

The 10 insertion pieces are always inserted parallel to the longitudinal axis of cartridge into the 14 connection place; thus, the 11 seals are under pressure when the cartridge is mounted in the 12 valve battery body and ensure sufficient sealing.

The advantage of the cartridge according to the invention is that, by changing the 10 insertion piece that requires no special skill, the function of the cartridge can be arbitrarily specified and changed by using the 10 insertion pieces available.

## List of elements

- 1 driving arm
- 2 lever holder
- 3 casing
- 4 ceramic moving element
- 5 control disc
- 6 inlet disc
- 7 rotational axis
- 8 rubber sealing
- 9 base
- 10 insertion piece
- 11 seal
- 12 valve battery body
- 13 connection ducts
- 14 connection place



## Claims

1. Valve battery cartridge - used primarily for mixing cold water and warm water - which has two discs arranged one above the other to form a plane sealing together, being the lower disc a stationary inlet disc and the upper disc a control disc suitable to be displaced and rotated on the inlet disc; where said control disc is in mechanical connection with a driving arm pivoted in a lever holder - through a ceramic moving element as the case may be - and the lever holder is arranged in the cartridge casing that allows it to be rotated, **characterized by that** the part of the cartridge casing (3) near the inlet disc (6) - preferably, its base (9)) - is provided with a connection place (14) on the side opposite to the inlet disc (6) to accommodate several insertion pieces (10) - preferably of various function - where its hole suitable to accommodate the insertion piece (10) is arranged essentially in the direction opposite to the base (9) of the cartridge.

2. Cartridge as in claim 1, **characterized by that** the insertion piece (10) is arranged at least partly between the valve battery casing.



## Universal cartridge for a mixer faucet

### Abstract

**Applicant:** MULTIPOLÁR II. Kft  
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**Inventor:** Győző Baki  
1111 Budapest, Zenta u 5.

Valve battery cartridge - used primarily for mixing cold water and warm water - which has two discs arranged one above the other to form a plane sealing together, being the lower disc a stationary inlet disc (6) and the upper disc a control disc (5) suitable to be displaced and rotated on the inlet disc (6); where said control disc (5) is in mechanical connection with a driving arm (1) pivoted in a lever holder (2) - through a ceramic moving element (4) as the case may be - and the lever holder (2) is arranged in the cartridge casing that allows it to be rotated, whereas the part of the cartridge casing (3) near the inlet disc (6) - preferably, its base (9) - is provided with a connection place (14) on the side opposite to the inlet disc (6) to accommodate several insertion pieces (10) - preferably of various function - where its hole suitable to accommodate the insertion piece (10) is arranged essentially in the direction opposite to the base (9) of the cartridge.

(Figure 1.)

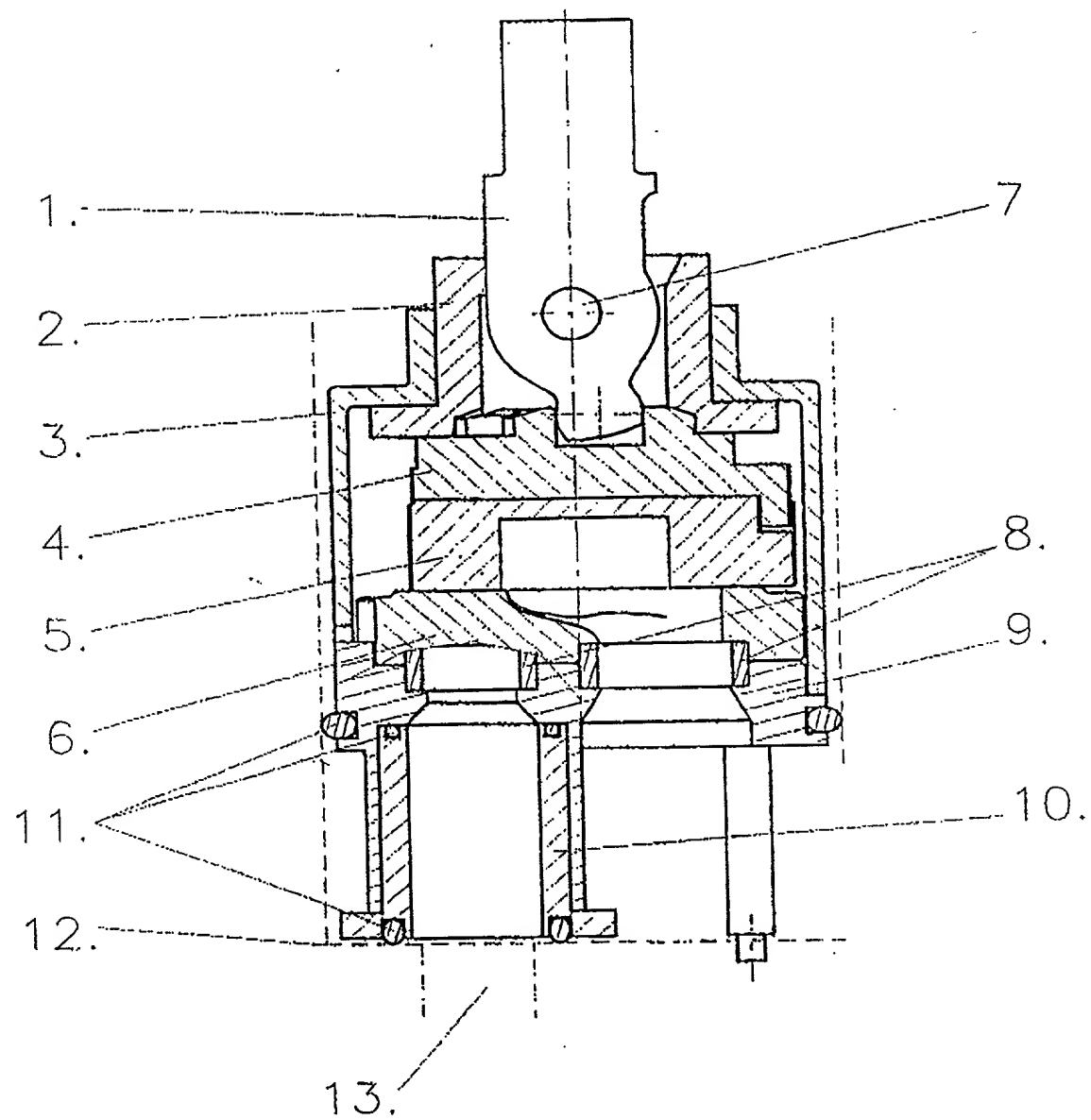


Fig. 1.

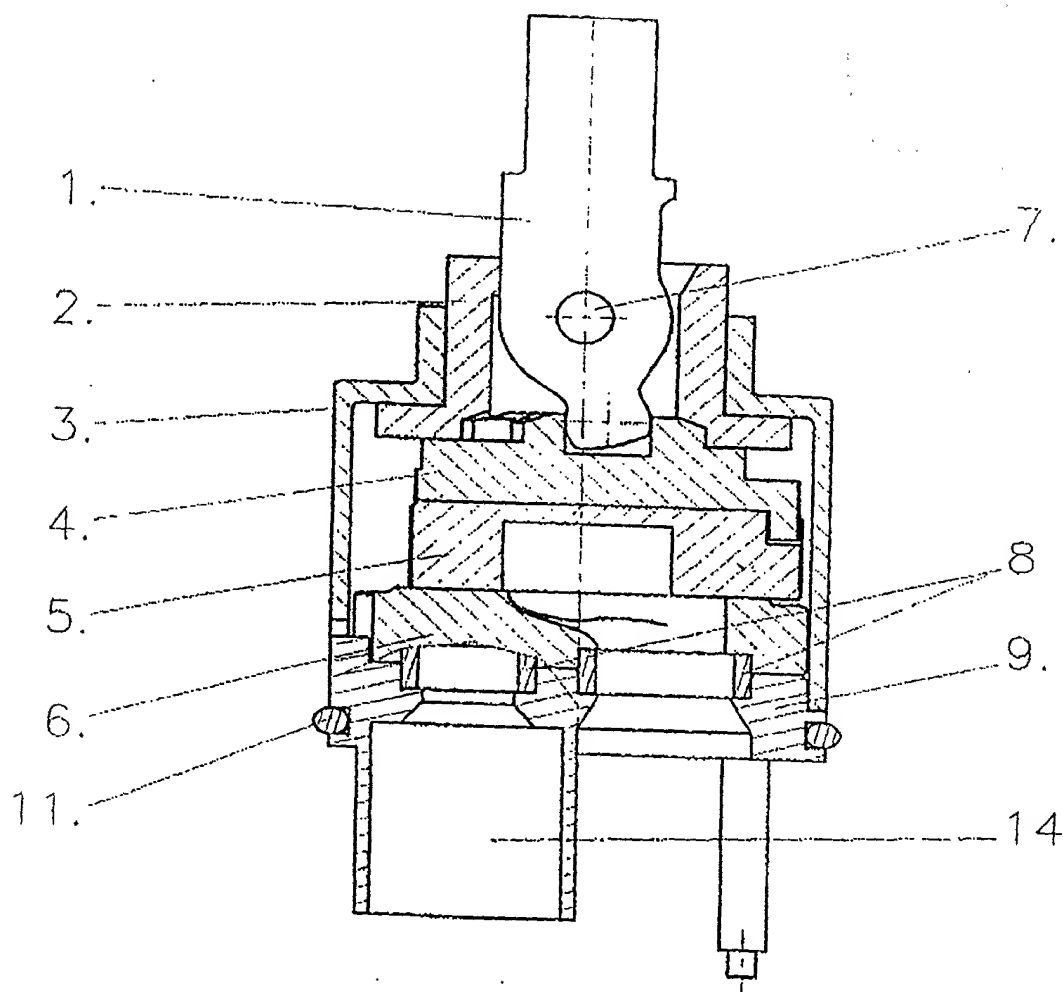


Fig. 2.

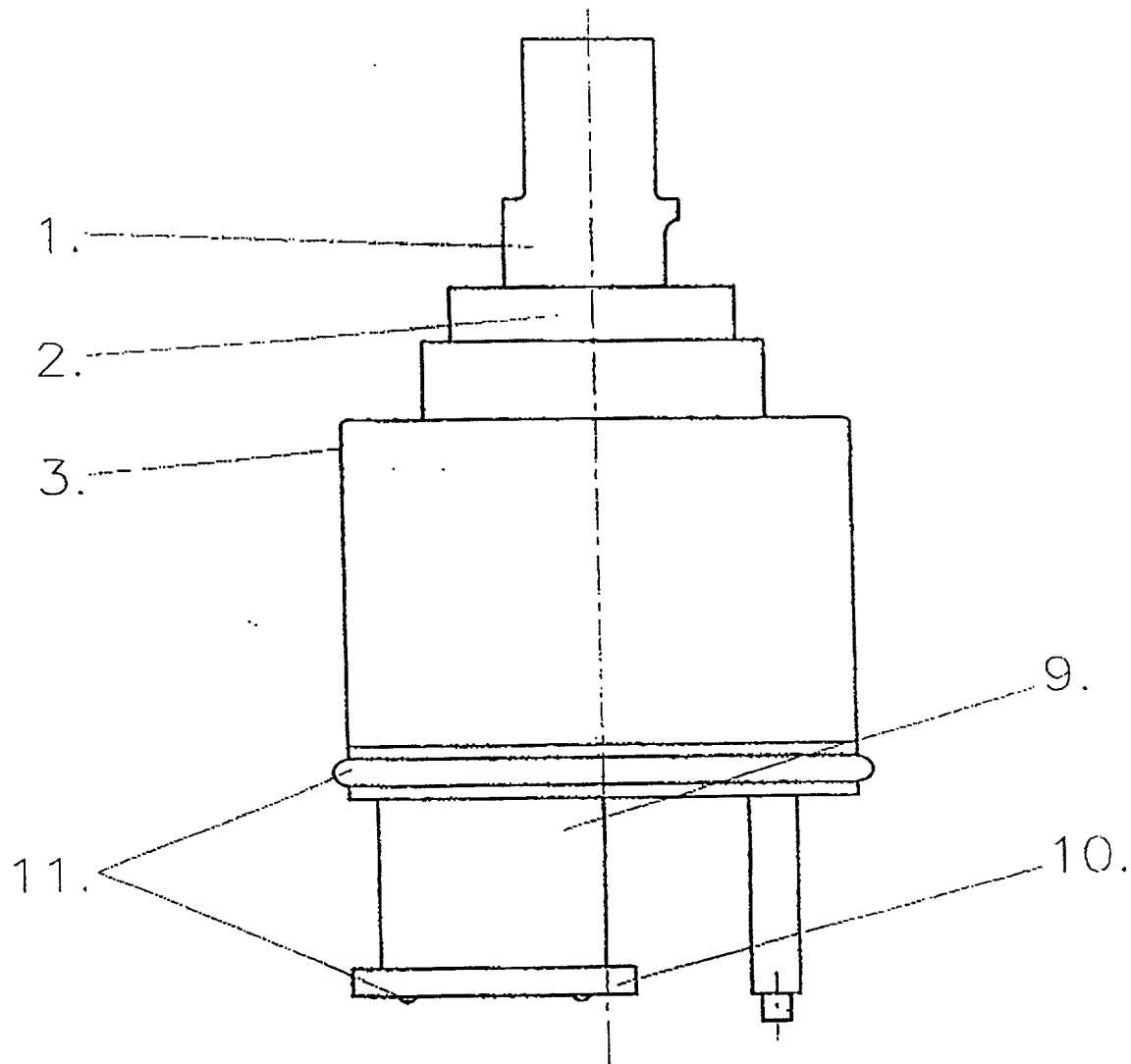


Fig. 3.

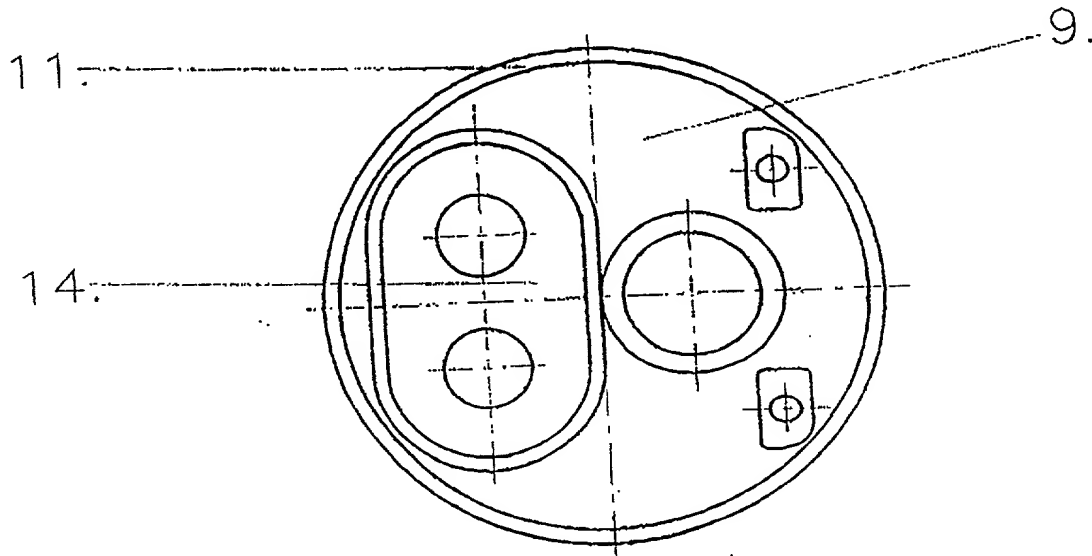


Fig. 4.

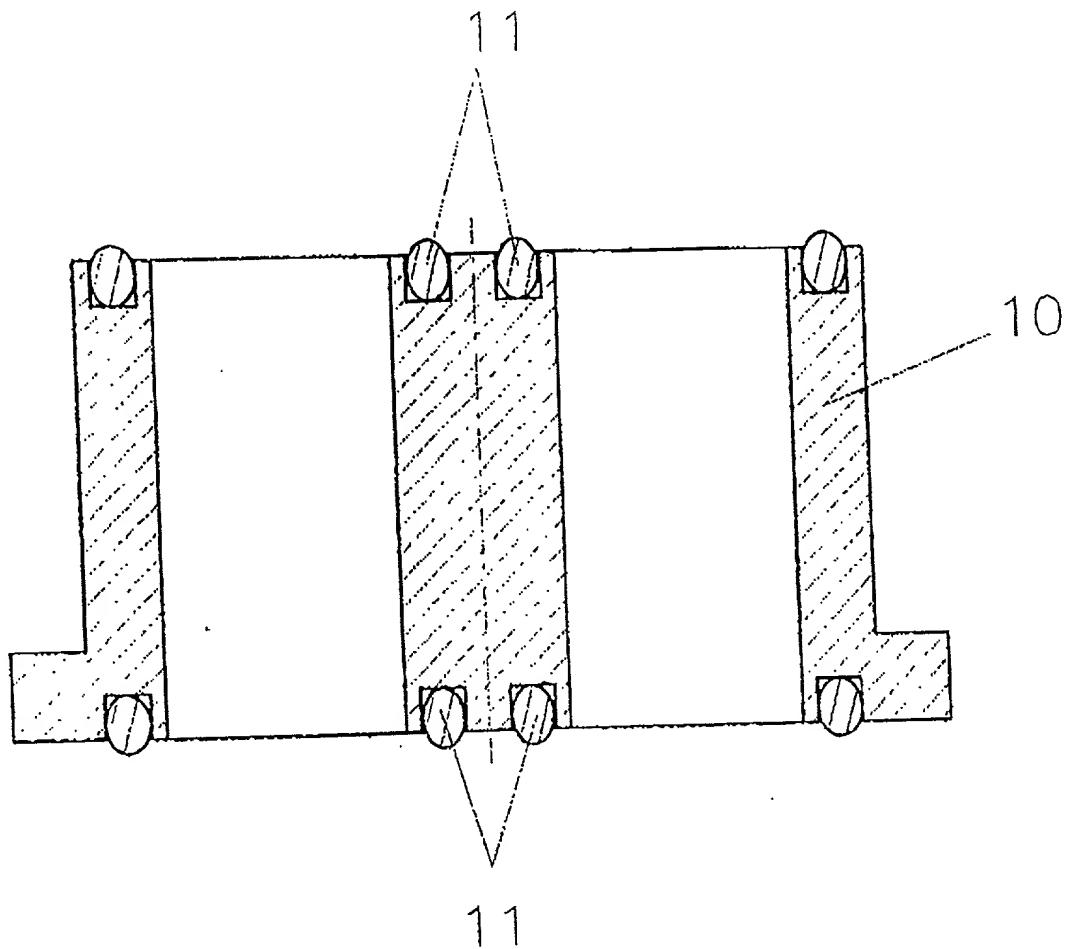
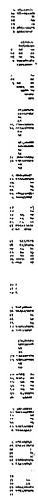


Fig. 5.



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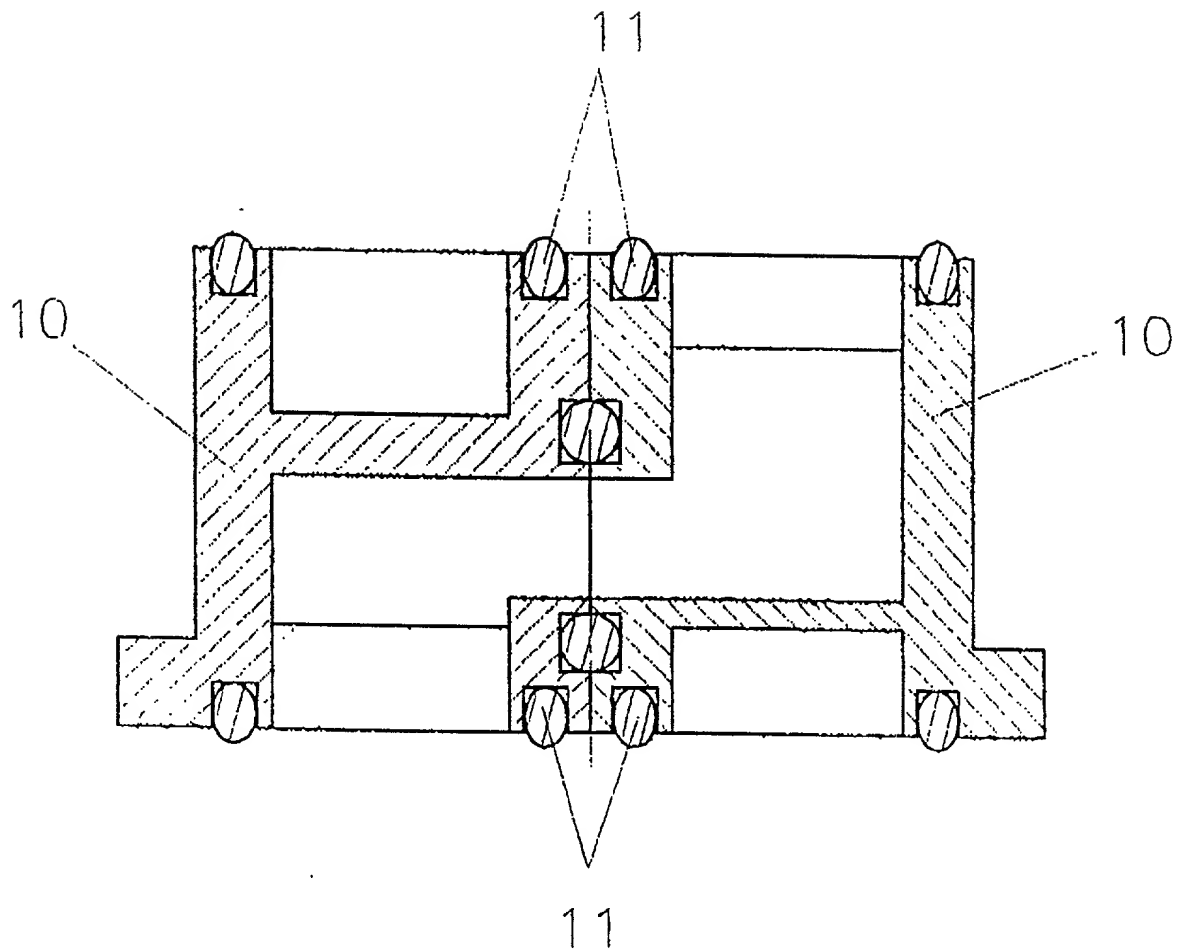


Fig. 7.



USSN 09/744,035

Practitioner's Docket No. 01-117

**PATENT****COMBINED DECLARATION AND POWER OF ATTORNEY**

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL, CONTINUATION, OR C-I-P)

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type:

(check one applicable item below)

- ☐ original.  
☐ design.

**NOTE:** With the exception of a supplemental oath or declaration submitted in a reissue, a supplemental oath or declaration is not treated as an amendment under 37 CFR 1.312 (Amendments after allowance). M.P.E.P. § 714.16, 7th Edition.

- ☐ supplemental.

**NOTE:** If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☒ national stage of PCT.

**NOTE:** If one of the following 3 items apply, then complete and also attach **ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.**

**NOTE:** See 37 C.F.R. § 11.63(d) (continued prosecution application) for use of a prior nonprovisional application declaration in the continuation or divisional application being filed on behalf of the same or fewer of the inventors named in the prior application.

- ☐ divisional.  
☐ continuation.

**NOTE:** Where an application discloses and claims subject matter not disclosed in the prior application, or a continuation or divisional application names an inventor not named in the prior application, a continuation-in-part application must be filed under 37 C.F.R. § 1.53(b) (application filing requirements — nonprovisional application).

- ☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

**WARNING:** If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

UNIVERSAL CARTRIDGE FOR A MIXER FAUCET

(Declaration and Power of Attorney [1-1]—page 1 of 7)

09/24/07 09:00:00

## SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b), or (c))

(a) ☐ is attached hereto.

NOTE: "The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☐ was filed on \_\_\_\_\_, as ☐ Serial No. 0 / \_\_\_\_\_  
or ☐ \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 C.F.R. § 1.67.

NOTE: "The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(A) application number (consisting of the series code and the serial number, e.g., 08/123,456);

"(B) serial number and filing date;

"(C) attorney docket number which was on the specification as filed;

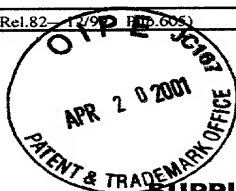
"(D) title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(E) title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number, e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

M.P.E.P. § 601.01(a), 7th Ed.

(c) ☒ was described and claimed in PCT International Application No. PCT/HU99/00052, filed on July 16, 1999 and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

(Declaration and Power of Attorney [1-1]—page 2 of 7)

**SUPPLEMENTAL DECLARATION (37 C.F.R. § 1.67(b))**

(complete the following where a supplemental declaration is being submitted)

- ☐ I hereby declare that the subject matter of the
- ☐ attached amendment
  - ☐ amendment filed on \_\_\_\_\_

was part of my/our invention and was invented before the filing date of the original application, above-identified, for such invention.

**ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR**

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

(also check the following items, if desired)

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 C.F.R. § 1.98.

**PRIORITY CLAIM (35 U.S.C. §§ 119(a)-(d))**

**NOTE:** "The claim to priority need be in no special form and may be made by the attorney or agent if the foreign application is referred to in the oath or declaration as required by § 1.63. The claim for priority and the certified copy of the foreign application specified in 35 U.S.C. 119(b) must be filed in the case of an interference (§ 1.630), when necessary to overcome the date of a reference relied upon by the examiner, when specifically required by the examiner, and in all other situations, before the patent is granted. If the claim for priority or the certified copy of the foreign application is filed after the date the issue fee is paid, it must be accompanied by a petition requesting entry and by the fee set forth in § 1.17(f). If the certified copy is not in the English language, a translation need not be filed except in the case of interference; or when necessary to overcome the date of a reference relied upon by the examiner; or when specifically required by the examiner, in which event an English language translation must be filed together with a statement that the translation of the certified copy is accurate." 37 C.F.R. § 1.55(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §§ 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

- (d) ☐ no such applications have been filed.
- (e) ☒ such applications have been filed as follows.

**NOTE:** Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

(Declaration and Power of Attorney [1-1]—page 3 of 7)

"FOOTNOTED" SECTION 60



**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
Hungary	P 9801648	22.07.98	<input checked="" type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>
			<input type="checkbox"/> YES    NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)**  
(34 U.S.C. § 119(e))

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)**  
**UNDER 35 U.S.C. § 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

(Declaration and Power of Attorney [1-1]—page 4 of 7)

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following practitioner(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

(list name and registration number)

Robert H. Bachman (19,374), Gregory P. LaPointe (28,395),  
Barry L. Kelmacher (29,999) and George A. Coury (34,309)

(check the following item, if applicable)

- ☐ I hereby appoint the practitioner(s) associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.
- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named practitioner(s) to accept and follow instructions from my representative(s).

NOTE: "Special care should be taken in continuation or divisional applications to ensure that any change of correspondence address in a prior application is reflected in the continuation or divisional application. For example, where a copy of the oath or declaration from the prior application is submitted for a continuation or divisional application filed under 37 CFR 1.53(b) and the copy of the oath or declaration from the prior application designates an old correspondence address, the Office may not recognize, in the continuation or divisional application, the change of correspondence address made during the prosecution of the prior application. Applicant is required to identify the change of correspondence address in the continuation or divisional application to ensure that communications from the Office are mailed to the current correspondence address. 37 CFR 1.63(d)(4)." § 601.03, M.P.E.P., 7th Edition.

**SEND CORRESPONDENCE TO****DIRECT TELEPHONE CALLS TO:**  
(Name and telephone number)

☒ Address

Bachman & LaPointe, P.C.  
900 Chapel Street, Suite 1201  
New Haven, CT 06510-2802

Robert H. Bachman  
(203) 777-6628

☐ Customer Number \_\_\_\_\_

(complete the following if applicable)

Since this filing is a ☐ continuation ☐ divisional there is attached hereto a Change of Correspondence Address so that there will be no question as to where the PTO should direct all correspondence.

(Declaration and Power of Attorney [1-1]—page 5 of 7)



## DECLARATION

I hereby declare that the statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

### SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

NOTE: Each inventor must be identified by full name, including the family name, and at least one given name without abbreviation together with any other given name or initial, and by his/her residence, post office address and country of citizenship. 37 CFR § 1.63(a)(3).

NOTE: Inventors may execute separate declarations/oaths provided each declaration/oath sets forth all the inventors. Section 1.63(a)(3) requires that a declaration/oath, inter alia, identify each inventor and prohibits the execution of separate declarations/oaths which each sets forth only the name of the executing inventor. 62 Fed. Reg. 53,131, 53,142, October 10, 1997.

#### Full name of sole or first inventor

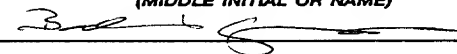
GYOZO

(GIVEN NAME)

(MIDDLE INITIAL OR NAME)

BAKI

FAMILY (OR LAST NAME)

Inventor's signature 

Date 03 03 2001

Country of Citizenship Hungary

Residence Zenta ut 5, H-1111 Budapest, Hungary

Post Office Address SAME AS ABOVE

#### Full name of second joint inventor, if any

(GIVEN NAME)

(MIDDLE INITIAL OR NAME)

FAMILY (OR LAST NAME)

Inventor's signature <sup>1</sup>

Date

Country of Citizenship

Residence

Post Office Address

#### Full name of third joint inventor, if any

(GIVEN NAME)

(MIDDLE INITIAL OR NAME)

FAMILY (OR LAST NAME)

Inventor's signature

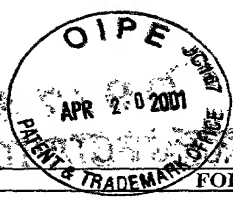
Date

Country of Citizenship

Residence

Post Office Address

(Declaration and Power of Attorney [1-1]—page 6 of 7)



(check proper box(es) for any of the following added page(s)  
that form a part of this declaration)

- ☐ **Signature** for fourth and subsequent joint inventors. *Number of pages added* \_\_\_\_\_

\* \* \*

- ☐ **Signature** by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. *Number of pages added* \_\_\_\_\_

\* \* \*

- ☐ **Signature** for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. *Number of pages added* \_\_\_\_\_

\* \* \*

- ☐ Added page for **signature** by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

\* \* \*

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added \_\_\_\_\_

\* \* \*

- ☐ Authorization of practitioner(s) to accept and follow instructions from representative.

1

\* \* \*

(if no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item)

- ☒ This declaration ends with this page.

TECHNO-SEARCHED